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DESCRIPTION

OF THE

NEW PATENT

STEERING MACHINE.

Letters Patent No. 1220, A.D. 1779.

1651/765

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THE cuſtomary modes of ſteering Ships have been hitherto ſubject to numerous inconveniencies.

The Tiller, by its length, is not only cumberſome, but obſtructs the Seaman in many neceſſary operations; particularly on board Ships or ſmaller Veſſels where it is upon the upper or quarter Decks, the one half of which is thereby taken up.

In large Ships, the Tiller alone proving inſufficient for the purpoſe, Ropes, Blocks and Pullies have been neceſſarily brought to its Aid. The Riſque attendant on theſe in time of action with an Enemy, and under various other caſualties incident to Shipping, is certainly worthy a ſerious attempt to remove.

In Merchant Ships, the Gun Room is generally ſo filled, that the Tiller has ſcarce room to traverſe; and if by any accident the Tiller, Ropes, or Blocks, become damaged or deficient, it is a tedious and troubleſome taſk to replace them with Others; and in the mean while, the delay muſt be dangerous, and may be fatal.

The ſpace occupied by the Tiller and its Tackle, in the Gun Room, is deſirable to the Merchant for the increaſe of his Freight; and, on that account, is, even at much hazard in the common mode, attempted to be filled. By the Method herein recommended, the Merchant will have this Space to uſe without Riſque, and the Beams below the Cabin Deck may be pillar'd — a very needful precaution in arm'd Ships, to bear the

Weight

Weight of the Guns in that part where the heavieſt are uſually carried.—To Ships of War the Tiller, wherever placed, whether in the Gun Room, Cabin, or upon Deck, is a great Incumbrance: and the proportionable advantage derived from its removal, will be obvious to every Seaman.

How far the Patent Steering Machine will remove the before-mentioned inconveniences, and contribute to the eaſe, as well as the ſafety, of the Mariners and Veſſel, we now ſubmit to the judicious Navigator. To be found to have, in any degree, contributed to their ſafety, we ſhall deem our greateſt merit; and therefore we flatter ourſelves, that even the preſent attempt towards it will not be thought impertinent. Influenced by this Idea, we now venture to ſollicit the Conſideration of all who are intereſted, or employed, in the management of Ships. Senſible of the Riſque which every man runs who ſtakes his name on any new Invention, or Adoption, we have deferr'd recommending this machine to public notice, until in repeated trials we had juſtified Theory by Practice.

It has been uſed with ſucceſs in a Ship of Four hundred Tons burthen, in the Weſt India Trade, for four Years; during that time the Ship has made five voyages, and ſuſtain'd many violent Gales of Wind: ſhe was diſmaſted in the Hurricane in the Leeward Iſlands 1776, her rudder broke, and her Bowſprit ſprung, yet the ſame Machine, firſt put up, remains to this hour perfect and intire, nor has it in any inſtance fail'd.

It ſtands alſo, in this caſe, a full proof of the Gain reſulting from its uſe to the Owners of a Ship. The ſpace in the Gun Room, which was formerly left for the Tiller and its Tackle, has, during the five Voyages above-mentioned, been filled with Merchandize, both outward and homeward bound, the Freight of which has already exceeded Three hundred Pounds Sterling.

The Figures 1, and 2, in the Plate, will give a general view of the whole Machine, which conſiſts of very few parts. Ships are differently conſtructed, ſome have their ſtern poſts almoſt perpendicular, others with a conſiderable Rake. The Steering Machine is ſo contrived, as to be alike applicable to all. In thoſe whoſe Stern-poſts rake, and where (on that account, or from other cauſes) the ſpace abaft the rudder is not ſuf-

ſufficient for the Quadrant to traverſe clear of the Stern, we uſe the Quadrant (B) with the Teeth on the inſide of the Arch. It is let down on the head of the Rudder, nearly even with the upper edge of the upper mortice (l) cut for the Tiller; and being there ſecurely wedged on, proves a hoop, or binding, to the Rudder Head.

The Quadrant is fixed ſo, as to form a Rectangle with the Stern-poſt, and have the ſame Centre with the Rudder.

The Pinion Wheel (i) and Spindle (b) are placed parallel to the Stern-poſt, and made to act on the Quadrant by a Wheel (a) fix'd on the Top of the Spindle, parallel to the Plane of the Quadrant, and turn'd by the Helmſman. The ſuperior Power thus obtain'd, beyond that of the Tiller, *&c.* is evident to any Perſon converſant in Mathematical Calculation.

Every Inconvenience apprehended from the riſing of the Rudder, is obviated in the conſtruction of this Machine; the Spindle and Pinion-Wheel being exactly parallel to the Stern-Poſt, and conſequently, to the Rudder, the Quadrant at Rectangle thereto, plays eaſily up and down, to the utmoſt bound the Rudder can poſſibly riſe.

The Frame Work, ſupporting the Spindle when it is ſtep'd on the upper Deck, is ſo conſtructed (as appears by the Plate, Fig. 1 and 2) to leave room, if at any time it was thought neceſſary, for a Tiller to be ſhip'd and to traverſe below it. The ſame Proviſion is made, if the Spindle ſteps on the middle Deck, for a Tiller to be ſhip'd either in the Cabin or Gun-Room.

Experience has hitherto given no cauſe to ſuppoſe ſuch Precaution neceſſary; it is however certain, that by adopting this Machine, great advantage and convenience may accrue, without leſſening the Power of inſtantly applying, and uſing, the former mode of Tiller, *&c.* whenever it ſhall be judged proper.

This will be attain'd without removing the Machine, the Spindle being made to ſtep in a Steel Socket, which Socket is ſet in an oblong Frame,

Frame, and wedged therein up to the Teeth of the Quadrant, to keep the Teeth of it, and the Pinion Wheel, true and cloſe to each other. Such being their Situation, by only removing the Wedge, the Spindle falls back ſufficiently to leave the Rudder free, and ſubſervient to the ſole agency of the Tiller.

Apprehenſions therefore which might prevail againſt its uſe, with thoſe who are ſcrupulous about leaving an old Path, are thus compleatly obviated; and it is plainly proved, that in furniſhing them with additional Powers, and Accommodation, we do not deprive the Mariners of any that they enjoy'd before.

In the old method of ſteering with a Tiller, Ropes and Wheels, the action of the Helmſman is not immediately communicated to the Rudder, the Rope being more or leſs ſlack muſt be hove taught before any effect can be produced by the Tiller; but, in the Patent Steering Machine, the Motion is inſtantly communicated by the ſlighteſt touch of the Helmſman's Hand.

The Index (g) placed immediately below the Horizontal Wheel (a), moving between the Sheaves (n n) ſhews the Helmſman the exact Poſition of the Rudder; and the Steerage becomes at once quick, eaſy, and certain.

The Tiller in its action ſhoves the Rudder from the Stern Poſt, and is, conſequently, a ſtrain on it, as well as on the Googings and Pintles; but the Quadrant and pinion wheel, as we have placed them, act in aid of all, being like a Shoar or Support to the Rudder in every Poſition; and keeping the motion of the Pintles in the Googings, true, equal and regular, prove in fact another more powerful Brace.

Should any one object to the ſuppoſed Bulk of the *foremoſt* Machine, if the Quadrant is placed in the Cabin; let it be obſerved, that it only extends two feet and a half, or three feet from the Rudder, even in Ships of 500 Tons burthen; and proportionably leſs in ſmaller veſſels. It may be neatly caſed into the Form of a Cabin Table, equally as convenient and uſeful as any other Table.

But, in Ships where the Stern-poſt is nearly perpendicular, and where there is ſufficient room abaft the Rudder for the Quadrant (A) with its Pinion Wheel clear of the Stern; the Quadrant is applied with its arch towards the Stern, the Center of which being (as deſcribed before) exactly over, or in a line with, the Center of the Pintles, it occupies very little Space, whether placed in the Cabin, Gun Room, or upon the upper Deck; and, like the other, is equally applicable to either: having then the Teeth on the outſide of the Arch, it gives the ſame aid in ſupport of the Rudder, and adds ſtrength to the Pintles and Googings.

The whole Apparatus can be fix'd, in any Ship, on twelve or fourteen Days previous Notice, at a very eaſy expence, which one voyage will amply repay.

We have thus given a plain deſcription of this Machine; and Models of it, in both Forms, may be ſeen at any Time. The candid Examination of its Powers and Conveniencies, the Compactneſs of its Form, and, above all, the Simplicity of its Conſtruction, we flatter ourſelves will ſoon recommend it to general Uſe.

Biſhopſgate-ſtreet,
August, 1779.

Thomas William Jolly.
Robert Beatty.

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REFERENCES to the PLATE.

Figure 1 Exhibits the Quadrant applied with its Arch abaft the Rudder.
Figure 2 Exhibits the Quadrant applied with its Arch before the Rudder.
a the Horizontal Wheel.
b the Spindle.
c, d, e, f, the Frame.
g the Index, and n n the Sheaves.
h the Quadrant.
i the Pinion Wheel.
k the Rudder Head.
l the Mortice for the Tiller.
m the place of the Socket.

Figure 3 exhibits a ſide view of the Machine, and the ſeveral Parts ſeparate.
A the Quadrant with the Teeth on the outſide of the arch.
B the Quadrant with the Teeth on the inſide of the arch.
C the Socket.
D the Socket Frame.
E the Wedge.
F the Pinion.
G the Spindle.

Fig. 3

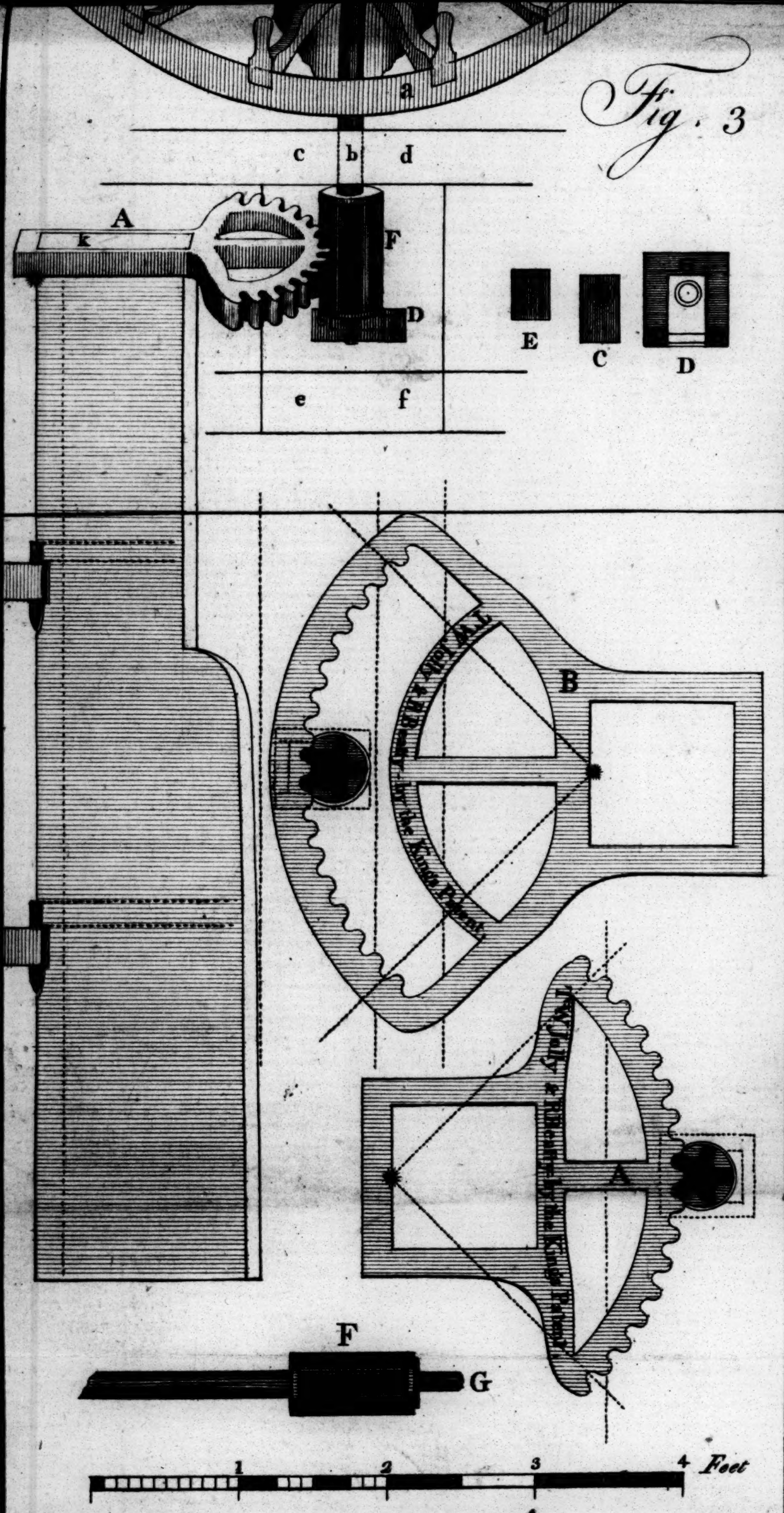
a
c
b
d
A
k
F
D
E
C
D
e
f
B
T.W. Jolly & R.B. Beatty by the Kings Patent
T.W. Jolly & R.B. Beatty by the Kings Patent
A
F
G
1
2
3
4 Feet

Fig. 1

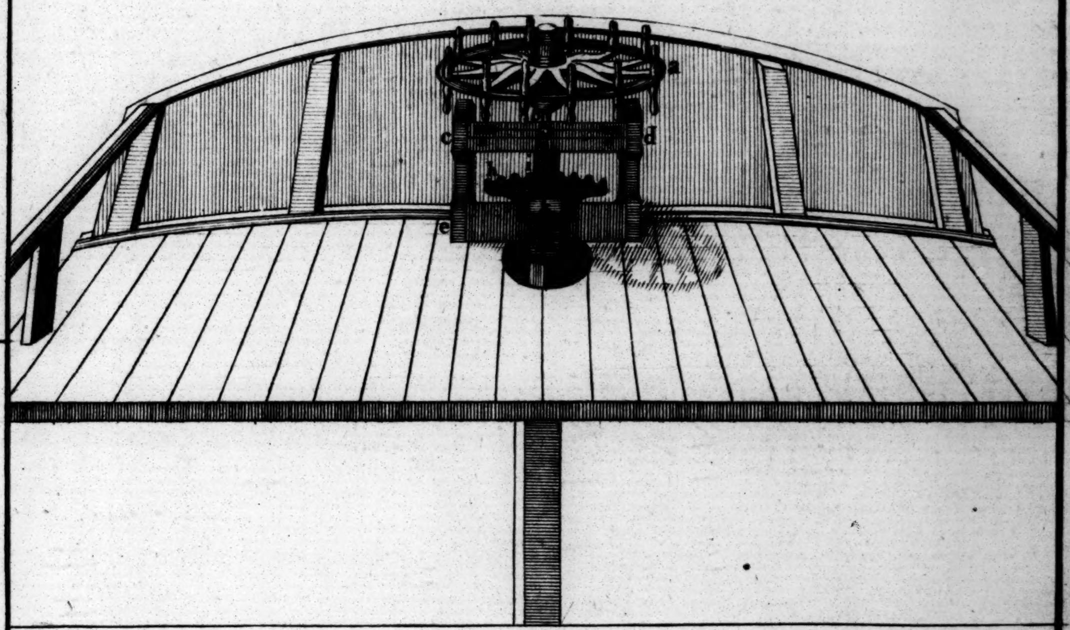

Fig. 2